

CLAIMS

1. A method for the treatment of waste water comprising an organic nutrient, wherein the waste water is brought into contact with microorganisms-comprising sludge particles, an oxygen-comprising gas is fed to the sludge particles, and the method further comprises the settling of the sludge particles and the discharge of organic nutrient-depleted waste water, **characterised** in that
- in a first step the waste water is fed to sludge granules,
 - 10 - after the supply of the waste water to be treated an oxygen-comprising gas is introduced in a second step, with the granules being in a fluidised condition and
 - in a third step, a settling step, the sludge granules are allowed to settle.
- 15 2. A method according to claim 1, **characterised** in that in the first step the waste water is fed to a bed of sludge granules, and the sludge granules settle in the third step, forming a bed of sludge granules.
- 20 3. A method according to claim 2, **characterised** in that the waste water is fed to the bed of sludge granules at a rate such as to avoid fluidisation of the bed.
- 25 4. A method according to one of the preceding claims, **characterised** in that at least a part of the nutrient-depleted waste water is discharged in the third step, after at least partial settling.
- 30 5. A method according to one of the preceding claims, **characterised** in that at least a part of the nutrient-depleted waste water is discharged during the feeding of waste water to the bed of sludge granules in the first step.
- 35 6. A method according to one of the preceding claims, **characterised** in that the discharge of nutrient-depleted waste water is the consequence of displacement due to waste water being fed to the bed of sludge granules.

7. A method according to one of the preceding claims, **characterised** in that the waste water is introduced in an amount of 50 to 110%, preferably 80 to 105% and most preferably 90 to 100% of the void volume of the
5 bed.

8. A method according to one of the preceding claims, **characterised** in that the introduction of the waste water is followed by an interval before commencing the second step.

10 9. A method according to claim 8, **characterised** in that the interval is sufficiently long for the removal of at least 50%, preferably at least 75% and most preferably at least 90% of the organic nutrient from the waste water.

15 10. A method according to one of the preceding claims, **characterised** in that a selection takes place in the third step, wherein sludge granules that settle more slowly are discharged from the reactor and sludge granules that settle more quickly remain in the reactor.